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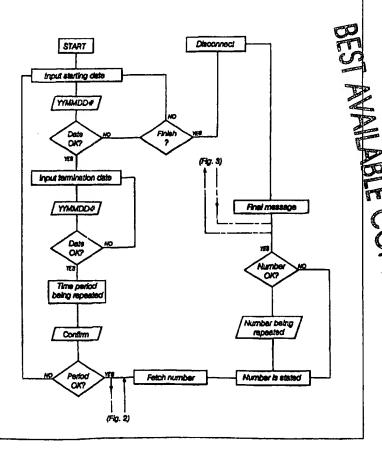
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(54) Title: TELEPHONING METHOD COMPRISING NOVEL SUBSCRIBER SERVICE

(57) Abstract

A telephoning method, intended to facilitate possibility to offer subscribers of a telephone network/telecommunication system a novel service for preferably incoming calls/communication. According to the invention, a subscriber can, preferably by means of dial-up and/or input, preferably via an existing keypad at the telephone instrument/terminal of the subscriber, of a predetermined booking number/code be given possibility to state a desired time period for a temporary telephone number/address, the subscriber after completed ordering operation preferably receiving a verbal message related to temporary telephone number/address, allocated which during the time period facilitates preferably incoming calls/communication, preferably without influencing the possibility of incoming and outgoing calls/communication with use of the normal telephone number/address of the subscriber. As time period, the subscriber preferably states starting date and terminating date, and possibility to state time interval within each twenty-four hour period can also be offered.



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Telephoning method comprising novel subscriber service

The present invention relates to a telephoning method, intended to facilitate possibility to offer subscribers of a 5 telephone network or similar a novel service, preferably for incoming calls/communication.

On certain occasions one might for example wish to advertise in a magazine with regard to matter when one at the same time 10 wishes to maintain certain anonymity. Such advertisements may be of the type contact advertisements, search for employment, sales, rental etc., when there are cases when it is unsuitable or not desirable to make it possible to identify the advertiser, something which normally can not be prevented 15 when the ordinary telephone number of the advertiser is stated. At the same time it is in many cases desirable and advantageous if interested parties are given possibility of direct and immediate telephone response, which normally increases the efficiency of an advertisement considerably. 20 For example, with regard to contact advertisements, which often are a sensitive matter for the advertiser and for which anonymity is desirable, today various types of "contact data bases" are used whereby a forwarding company, normally for a fee, transfer incoming replies by mail or via a pay number 25 (e.g. 071) for a fee gives a calling party ability of recordal of a reply, which may be played back or in any other way passed on to the advertiser. However, this is a complicated, indirect and expensive method, which most certainly prevents many interested parties from replying. There is also 30 a certain risk the mailed or recorded replies may be misused.

The object of the present invention is to disclose a method which maintains all advantages with an immediate, spontaneous and direct telephone response without interfering with the 35 wish of the advertiser to avoid giving away the identity of the advertiser by stating a telephone number in the advertisement. A further object is to offer this service in a simple and non-complicated manner, and by making use of the latent capacity which is available in a telephone network.

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This includes the possibility of offering a subscriber a temporary priority status/address with regard to Internet and similar services.

5 The telephoning method according to the present invention is intended to facilitate possibility to offer subscribers of a telephone network this novel service for incoming calls, and it is mainly characterized in that a subscriber by means of dial-up of a predetermined booking number is offered possi-10 bility to state a desired time period, preferably in the form of a starting date and an ending date for a temporary telephone number, that the subscriber preferably completed ordering operation immediately receives a verbal message related to allocated temporary telephone number, 15 which during the time period facilitates incoming calls, preferably without influencing the possibility of incoming and outgoing calls with use of the normal telephone number of the subscriber. Desired time period is preferably stated by a subscriber as a starting date and a terminating date, 20 preferably by input via an existing keypad on the subscriber's telephone.

The subscriber is advantageously offered, apart from starting date and closing date, possibility to also state time 25 interval within a twenty-four hour period, incoming calls being switched to the temporary telephone number only within such a time interval. Desired time interval is also for this feature preferably punched in via an existing keypad on the subscriber's telephone.

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A non-restricting example of the method according to the present invention, and modifications thereupon, are more fully described below with reference to the accompanying drawings, in which:-

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Fig. 1 is a flow chart showing an example of an input programming sequence from a subscriber desiring to obtain a further telephone number for incoming calls;

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Fig. 2 is a flow chart showing an example of an additional sequence, intended to facilitate restriction of the time period within a twenty-four hour period as the temporary subscriber number is available, for example being an additional part of the flow chart in Fig. 1 which is marked (Fig. 2);

Fig. 3 is a flow chart showing an example of an additional sequence, intended to facilitate possibility of early disconnection of the temporary subscriber number, for example being an additional part of the flow chart in Fig. 1 which is marked (Fig. 3); and

Fig. 4 is a view intended to show how temporary subscriber numbers are fetched from a stack with available subscriber numbers, and how temporary subscriber numbers after use are placed at the bottom of the stack.

An example of a preferred embodiment will now be more fully described with reference to the flow chart shown in Fig. 1. Telephone communication has been chosen as a descriptive example and one condition is that a telephone subscriber intending to use the service according to the present invention is connected to a program controlled telephone exchange, i.e. the type of telephone exchange in which connected subscribers by means of preferably tone signaling from a connected telephone can initiate or disconnect additional services, such as for example wake-up calls, follow-me diversion, three-party conference calls, inquiry/refer back or similar.

According to the invention, a subscriber initiates the service according to the invention by punching in a predetermined connecting code sequence on the keypad of the telephone, e.g. "*44#", which in the flow chart has been denominated as "START". As a result, the subscriber is connected to preferably a speech synthesizing equipment, which initially requests information from which date (year, month and day) as an additional telephone number is desired for incoming calls.

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This is punched in by the subscriber from the keypad of the telephone (denominated "YYMMDD#"), i.e. completed input may for example be terminated by the symbol "#". The date punched in is thereafter preferably checked with regard to validity, 5 and on approval a stop date is requested.

As shown in Fig. 1, the subscriber may advantageously initially be offered to deny the service, e.g. by inputting another predetermined code sequence indicating "stop", e.g.

- 10 By only entering "#", i.e. without numerals indicating "YYMMDD". A non-accepted date, or such a finishing code, thus results in the alternative that the subscriber is offered a second possibility of input or that the call is disconnected.
- 15 Provided that the start date is accepted, the subscriber receives a verbal message requesting stop date. This date is also checked for validity, and an incorrect date results in a repeated request for a stop date.
- 20 When both starting date and stop date have been inputted and accepted, inputted time period is verbally repeated to the subscriber, e.g. "Confirm that requested time period is from 15 June 1996 until 30 June 1996 by depressing 1, and if incorrect, depress 2".

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Should the subscriber choose not to accept received information relating to time period, i.e. in this particular case depress 2, the subscriber once more receives the initial message requesting a starting date.

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When accepted by the subscriber, in this particular case by depressing 1, an available telephone number is fetched, which is passed on to the subscriber with a request for repeating from the keypad of the telephone. Should the number be repeated incorrectly, the subscriber is once more informed of allocated telephone number, with a repeated request for repetition.

A final message is only given when the subscriber has

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correctly punched in allocated telephone number via the keypad of the telephone, and same may include a repeated message relating to time period and allocated telephone number.

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The allocated telephone number is connected for incoming calls to the telephone of the subscriber during programmed time period, and facilitates thus access to the telephone of the subscriber, preferably in parallel with the conventional telephone number.

The temporary telephone number results advantageously in a ring signal having different ring characteristics than normal, e.g. alternating long and short ring signals, only short ring signals, two short followed by a long ring signal or any other easily distinguishable ring signal. As a result, the subscriber receives before replying an indication whether or not it is a conventional telephone call to the ordinary number of the subscriber, or if it is somebody trying to establish contact via the temporary telephone number.

In many cases, it is desirable to restrict incoming calls to only a certain period of the day or night, e.g. only evenings between 18.00 and 21.00. For example, hereby the risk for unauthorized calls during the night are avoided. Such a function can be accomplished by adding to what has been described above with reference to Fig. 1 that which is disclosed in Fig. 2, for example added to the steps shown in Fig. 1 at the indication (Fig. 2).

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According to the modification shown in Fig. 2, the subscriber initially receives a question whether or not a restricted reply period is desirable. The subscriber can respond by the alternatives "yes/no", for example by depressing "1" for yes and by depressing "2" for no. Inputted response is interpreted in such a way, that the no-alternative results in return to the flow chart according to Fig. 1 ("fetch number"). However, should the subscriber choose the alternative "yes", a verbal message is received requesting input of

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starting time in the format hours/minutes (HHMM#). Input is advantageously terminated as shown by "#". Checking is thereafter carried out whether or not the starting time has been stated in correct format and thus acceptable, and should this not be the case, previously mentioned request for starting time with successively following input operation is repeated.

When a correct starting time has been punched in, the subscriber receives a verbal request for termination time, which is checked after completed input, and incorrect input results in a repeated request for termination time and a successively following input operation. When the termination time also has been punched in and accepted, the subscriber receives, preferably as shown, a verbal message comprising requested starting and termination time, which can be accepted or rejected by the subscriber by means of a yes-no-alternative (e.g. by the digit "1" indicating "yes" and the digit "2" indicating "no").

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Should the message related to inputted starting and stopping time be rejected, the above described sequence is advantageously repeated as from previously mentioned request for a starting time.

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However, should the message related to inputted times be accepted, reference is now made to the flow chart according to Fig. 1, i.e. to the function "fetch number".

30 Apart from what has been described above, a subscriber may also find it desirable to make a prior interruption of requested service with a temporary telephone number, e.g. when an advertisement has resulted in sale of advertised goods.

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An example of such a modification is shown in Fig. 3, and may advantageously be incorporated in the flow chart of Fig. 1 at the region marked as (Fig. 3).

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According to Fig. 3, the subscriber receives, after confirming acceptance of the temporary telephone number as received, also a stop code, comparable to a "pin code", e.g. a group of four digits. Such a message should preferably, as shown, be repeated by depressing a corresponding sequence of digits on the telephone of the subscriber, and an incorrectly punched in sequence of digits results in repetition of the message (followed by a repeated input operation from the subscriber). When the sequence of digits has been repeated correctly, return may, for example, as shown be performed before "final message" by the steps shown in Fig. 1.

The received code may be used for prior disconnection of the temporary telephone number, e.g. the subscriber calls a 15 termination number and inputs the temporary telephone number followed by obtained digit sequence for termination, possibly with the telephone number and the digit sequence separated, initiated and or terminated by e.g. "*" or "#". It may also be offered, in a corresponding way, possibility to extend the time; change time zone, etc.

The above and with reference to Figs. 1 - 3 described example of an embodiment, and modifications thereof, can obviously be changed in a number of ways, e.g. by changing the order for described functions; small changes with regard to checking functions; the ordering method of the subscriber and/or response to requested information; ordering and/or allocation of number may be in writing, via computer communication or via telecopier; the allocated number is a short code, alphanumerical or verbal address; etc.

The temporary telephone numbers which are used according to the invention may either comprise all available numbers within a call area, or a certain number sequence which is not used as normal telephone numbers. In the latter case, such a sequence of numbers can be made independent of call areas, while in the first case mentioned call charging normally is made more simple for the telephone company in question. The subscriber may also be offered the possibility of choosing if

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a "020 number" or similar (without or with only one call unit being charged the calling party) should be given, and will then himself accept charges of any additional call charges, e.g. for long distance calls.

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In all these cases, available telephone numbers are advantageously arranged in a "stack", new temporary telephone numbers being fetched from one side, whereas allocated telephone numbers after use being added at the opposed side of the storage medium, i.e. according to the principle "first in - last out". This principle is schematically shown in Fig. 4.

This results in the advantage, that a used telephone number is not reused again during a relatively long period of time, i.e. there is minimum risk that a subscriber receives calls related to a previous subscriber.

The method according to the present invention also offers 20 large economical advantages to the telephone company administrating the telephone network, since unused telephone numbers become used and cause an increased call frequency, and since the calling party is also debited a call charge, and the subscriber using the service can be debited for the time 25 period in which a temporary telephone number is used. Furthermore, the service is easily implemented in modern computer based telephone exchanges without requiring any personnel resources to maintain the service. The method can obviously also be used in connection with more simple types 30 of telephone exchanges, as well as external exchanges in relation to the telephone company, for example by addition of supplementary equipment handling the functions described above. The service can obviously also be carried out manually by use of a telephone operator who requests previously 35 mentioned information and gives out relevant information, and who also implements connection and disconnection of allocated temporary telephone number. However, this means considerable increases in costs for utilizing the invention. Alternatively, one can be given (by the telephone company or

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advertising/transferring company) an individual code number, possibly with a special "area code number" (for example a 071-number with the code supplied added as a suffix), which is stated in the advertisement and dialed by the person who wishes to reply to the advertisement. This number can be secretly transformed into the conventional number of the advertising party, to which connection is carried—out automatically. This can be offered by both external (the advertising/transferring company, which receives income when the 071-number of same is being used) as internal (the telephone company) exchanges, and results in an easily understandable modification of the preferred and herein described embodiment of the invention.

- 15 With regard to the modification previously described with reference to Fig. 2, same may advantageously be further modified in such a way that a calling subscriber receives a verbal message during the time period when the temporary telephone number does not result in a call to the subscriber.
- 20 Such a message may for example be: "We ask you to call again between 18.00 and 21.00". Such a modification increases the service level further, and each such call also result in call charge possibility for the telephone company. Also verbal informed telephone queuing may be incorporated, as well as
- 25 information disclosing that the call has been made to early, e.g. with regard to date, etc.

An allocated temporary telephone number should preferably be maintained secret, i.e. without disclosure of the name and/or address of the subscriber by means of a number enquiry. Furthermore, an allocated temporary telephone number may advantageously also offer a subscriber conventional services, such as "follow-me diversion", "call forwarding on no reply", "disclosure of calling number", "call waiting" and similar.

35 On the other hand, all outgoing calls from the subscriber are

35 On the other hand, all outgoing calls from the subscriber are preferably made using and charging the conventional number of the subscriber. The service can without any difficulties be charged on the conventional telephone bill of the subscriber based on the fact that a request for the service has been

made from the normal telephone number or with individual address information, and by stating desired time period for the temporary telephone number. When prior termination occurs, as previously discussed with reference to Fig. 3, the information relating to period of use can be automatically amended for the correct charge.

The functions required to use the method according to the present invention are already available in modern computer controlled telephone exchanges, and thus only require adapted software, which can be carried out by a person skilled in the art on basis of the present disclosure.

Shown and described embodiment, and modifications thereof, 15 only intend to serve as a non-restricting example within the scope of the inventive thought and the following claims, and may thus be further modified within the scope of the following claims. As example may information such as allocated temporary telephone number, termination code, ordered time 20 period and time interval each twenty-four hour period when the temporary telephone number is open for incoming calls, also be communicated in writing by letter to the subscriber, either as a substitute for previously mentioned verbal messages in connection with an ordering operation or as a 25 confirmation of completed order and given verbal messages. The method according to the present invention can also be used in communication via PC/modem, telephone communication and communication via closed circuit TV nets, telecopier communication, mobile telephone communication, ISDN, ra-30 dio/satellite telephone communication, etc, and for connections to Internet, whereby a possibility can be offered for obtaining "high priority" numbers/addresses. Such a number for connection to Internet can be given for a certain time period, and ensure complete security for a successful dialed 35 connection to Internet (or any other computer network) for completion with maximum security. The e-mail address of the user can also during desired time period be moved to a mail server with low work load, accessible via normal or a special number, in order to secure possibility to send/receive e-mail

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also during high intensity traffic periods, preferably according to stipulated policy/authorization criteria. Scientist, doctors and other professional users can hereby be offered communication security even during the hours when trivial traffic overload the dial-in modem pools connected to the computer network. A user can obviously also in the same way obtain a temporary address during a predetermined period of time, which can be communicated to colleagues and others with whom communication is given priority. Combinations of above discussed examples can also be implemented.

CLAIMS

- Telephoning method, intended to facilitate possibility to offer subscribers of a telephone network/telecommunication 5 system a novel service for preferably incoming calls/communication, characterized i n, that a subscriber, preferably by means of dial-up and/or input preferably via an existing keypad at the telephone instrument/terminal of the subscriber, of a predetermined booking 10 number/code and/or in writing/verbally is offered possibility to state a desired time period, preferably in the form of a starting date and an ending date for a required connectable temporary telephone number/address, that the subscriber preferably upon completed ordering operation receives a 15 verbal message related to allocated temporary telephone number/address, which during the time period facilitates preferably incoming calls/communication, preferably without influencing the possibility of incoming and outgoing calls/communication with use of the normal telephone num-20 ber/address of the subscriber.
- Telephoning method according to claim 1, c h a r a c t e r i z e d i n, that the subscriber, apart from start and ending date, also states a time interval within a twenty-four
 hour period, and that incoming calls are only switched through to the temporary telephone number during such a time interval.
- 3. Telephoning method according to claim 2, c h a r a c 30 t e r i z e d i n, that connecting operations intended for the temporary telephone number during time periods outside predetermined time interval result in a verbal message stating that the telephone number can not be reached at present, preferably also stating the time period during which connection to the subscriber is permitted.
 - 4. Telephoning method according to any one of claims 1-3, characterized in, that input of data related to desired use of the temporary telephone number is made on

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basis of received verbal messages, that checking is performed of validity of inputted information, and that unaccepted inputted information results in a repeated request for information, followed by repeated input and checking.

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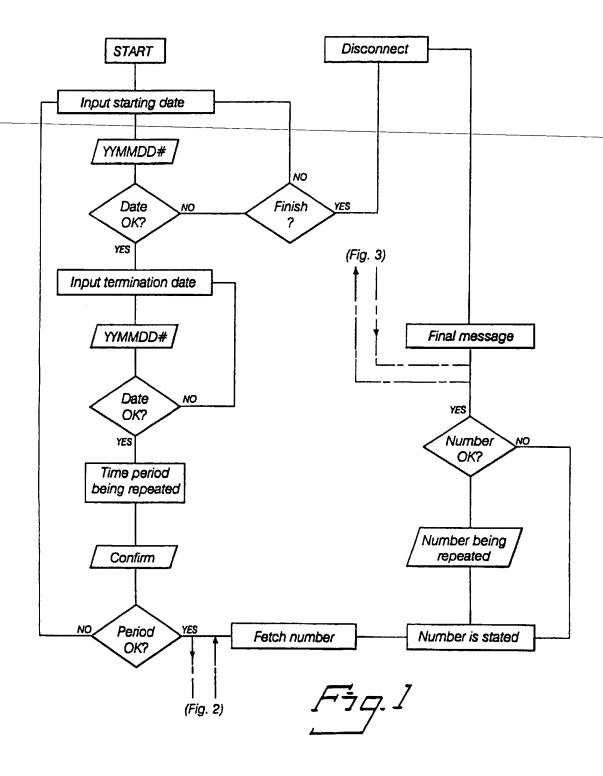
- 5. Telephoning method according to any one of claims 1 4, c h a r a c t e r i z e d i n, that a subscriber after input of desired use for the temporary telephone number obtains information relating to allocated temporary telephone number 10 as a verbal message and/or as a written confirmation by mail.
- 6. Telephoning method according to any one of claims 1 5, c h a r a c t e r i z e d i n, that a subscriber after accepted input of data relating to desired features for the use of the temporary telephone number receives information relating to a preferably multi-digit cancellation code, which after connection to a predetermined telephone number, and preferably in conjunction with allocated temporary telephone number, facilitates cancellation of the temporary telephone number service prior to the end of a previously stated time period.
- Telephoning method according to any one of claims 1 6, c h a r a c t e r i z e d i n, that ring signals indicating
 calls via allocated temporary telephone number have ring characteristics different from ring signals indicating a call via the ordinary telephone number of the subscriber.
- 8. Telephoning method according to any one of claims 1 7, 30 c h a r a c t e r i z e d i n, that utilized temporary telephone numbers comprises of available vacant telephone numbers within the call area of the subscriber or a number series dedicated for the purpose, and that temporary telephone numbers preferably are allocated from such a bank of 35 numbers according to the principle "first out - last in" whereby the time period before reusing a telephone number is maximized.
 - 9. Telephoning method according to any one of claims 1 8,

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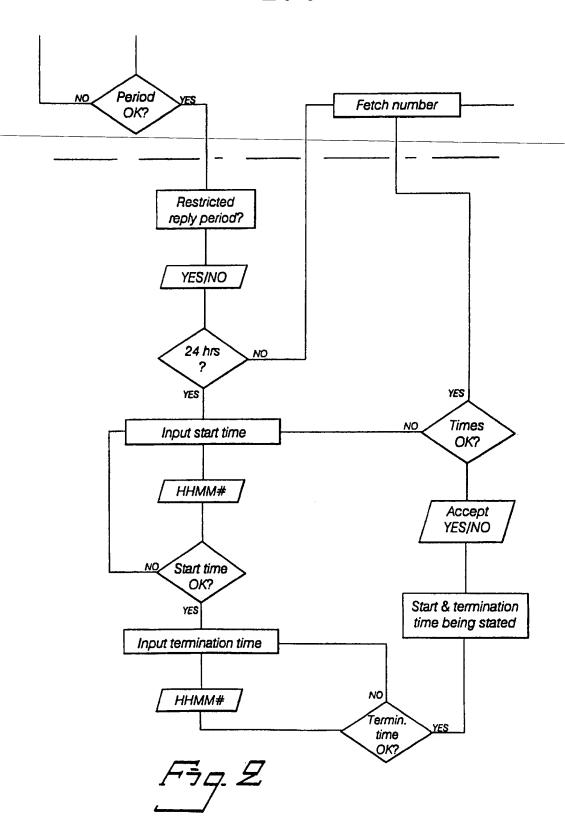
c h a r a c t e r i z e d i n, that utilized temporary telephone numbers facilitate use of additional services programmable by the subscriber, such as for example follow-me diversion, call forwarding on no reply, three-party conference calls, "call waiting" and similar.

10. Telephoning method according to any one of claims 1 - 9, c h a r a c t e r i z e d i n, that preferably for "Internet" and similar applications the temporary telephone number/address is preferably allocated according to certain status criteria and given a higher degree of priority than the conventional telephone number/address.

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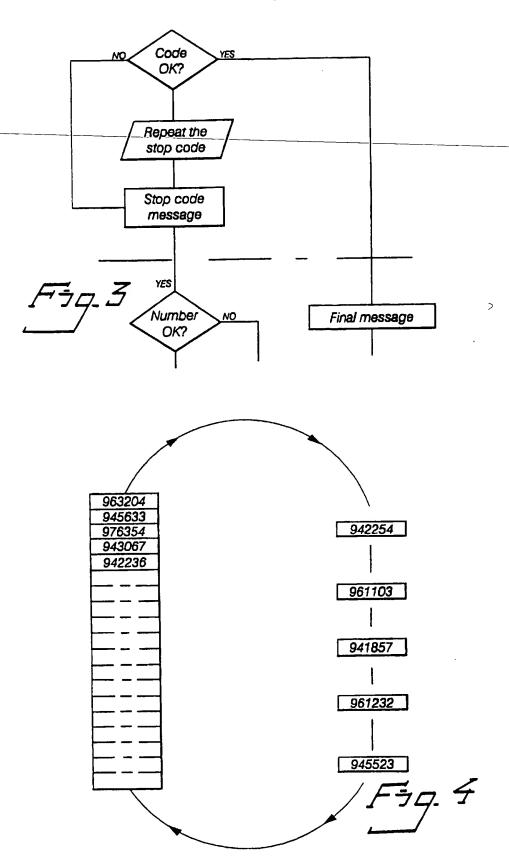


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WO 97/45988



INTERNATIONAL SEARCH REPORT

International application No. PCT/SE 97/00858

A. CLASSIFICATION OF SUBJECT MATTER IPC6: H04M 3/42 According to International Patent Classification (IPC) or to both national classification and IPC **B. FIELDS SEARCHED** Minimum documentation searched (classification system followed by classification symbols) IPC6: HO4M Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched SE, DK, FI, NO classes as above Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) WPI C. DOCUMENTS CONSIDERED TO BE RELEVANT Relevant to claim No. Citation of document, with indication, where appropriate, of the relevant passages 1-10 GB 2287852 A (RICHARD DOUGLAS SANDANASAMY), A 27 Sept 1995 (27.09.95), page 3, line 6 - page 4, line 18 1-10 US 5425081 A (GORDON ET AL), 13 June 1995 A (13.06.95), abstract 1-10 P,A US 5590184 A (THOMAS B. LONDON), 31 December 1996 (31.12.96), column 1, line 60 - column 2, line 25 Patent Abstracts of Japan, Vol 17, No 411, E-1406, 1 Α abstract of JP,A,5-76060 (MURATA MACH LTD), 26 March 1993 (26.03.93) See patent family annex. Further documents are listed in the continuation of Box C. later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention Special categories of cited documents document defining the general state of the art which is not considered to be of particular relevance "X" document of particular relevance: the claimed invention cannot be erlier document but published on or after the international filing date considered novel or cannot be considered to involve an inventive step when the document is taken alone document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination "O" document referring to an oral disclosure, use, exhibition or other being obvious to a person skilled in the art document published prior to the international filing date but later than "&" document member of the same patent family Date of mailing of the international search report Date of the actual completion of the international search 2 0 -10 - 1997 16 October 1997 Authorized officer Name and mailing address of the ISA/ Swedish Patent Office Box 5055, S-102 42 STOCKHOLM Friedrich Kühn Telephone No. + 46 8 782 25 00 Facsimile No. +46 8 666 02 86



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Information on patent family members

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	Patent document cited in search report		Publication date		Patent family member(s)	Publication date
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